

WHAT IS CLAIMED IS:

1. A magnetically shielded circuit board, comprising:

- (a) a circuit board;
- (b) a conductive solenoid, the conductive solenoid being imbedded within the circuit board; and
- (c) a power supply for sending an electrical current through the conductive solenoid.

2. The magnetically shielded circuit board of claim 1 and further comprising an integrated circuit package, the integrated circuit package being located on the magnetically shielded circuit board.

3. A magnetically shielded circuit board, comprising:

- (a) a circuit board;
- (b) a conductive solenoid, the conductive solenoid being located around the circuit board; and
- (c) a power supply for sending an electrical current through the conductive solenoid.

4. A magnetically shielded circuit board, comprising:
a circuit board, a first conductive solenoid having a first axis, the first conductive solenoid being around a first electrically insulative circuit board layer, the first electrically insulative circuit board layer and first conductive solenoid being imbedded in the circuit board, and a second conductive solenoid having a second axis, the second conductive solenoid being around a second electrically insulative circuit board layer, the second electrically insulative circuit board layer and second conductive solenoid being imbedded in the circuit board, the second axis being perpendicular to the first axis.

5. The magnetically shielded circuit board of claim 1 wherein the conductive solenoid is a superconductive solenoid.

6. A circuit board configuration comprising the magnetically shielded circuit board of claim 5 and a space vehicle, the magnetically shielded circuit board being connected to a skin of the space vehicle, heat from the superconductive wire solenoid being conducted through the space vehicle to the exterior of the space vehicle, when the space vehicle is traveling in space.

7. The circuit board configuration of claim 6 and further comprising a thermal radiator, the thermal radiator connected to the exterior of the space vehicle, the thermal radiation being able to radiate heat energy into space, the superconductive wire solenoid in thermal contact with the thermal radiator.

8. A method of deflecting charged particles from striking an integrated circuit package that is located on a circuit board, comprising:

- (a) placing two conductive solenoids into the circuit board, each conductive solenoid having a longitudinal axis, the longitudinal axis of one of the two conductive solenoids forming a right angle with the longitudinal axis of the other of the two conductive solenoids;
- (b) detecting the arrival of charged particles at the circuit board; and
- (c) sending an electrical current through the two conductive solenoids to deflect further charged particles away from the circuit board.

9. A magnetically shielded integrated circuit package, comprising:

- (a) an integrated circuit package;
- (b) an integrated circuit chip, the integrated circuit chip located within the integrated circuit package; and
- (c) a conductive solenoid, the conductive solenoid located around the integrated circuit chip, the conductive solenoid being located within the integrated circuit package.

10. Apparatus for deflecting charged particles away from a circuit board, comprising:

- (a) two conductive solenoids around the circuit board, each conductive solenoid having a longitudinal axis, the longitudinal axis of one of the two conductive solenoids forming a right angle with the longitudinal axis of the other of the two conductive solenoids;
- (b) a particle detector for detecting arrival of charged particles at the circuit board; and
- (c) a power supply for sending an electrical current through the two conductive solenoids, when the particle detector detects the arrival of charged particles, to deflect later arriving charged particles away from the circuit board.

11. Apparatus for deflecting charged particles away from a circuit board, comprising:

- (a) three solenoids around the circuit board, each of the three solenoids having a longitudinal axis, a longitudinal axis of one of the three solenoids forming a right angle with a longitudinal axis of each of other two solenoids;
- (b) a particle detector for detecting arrival of charged particles at the circuit board; and
- (c) a power supply for sending an electrical current through the three solenoids, when the particle detector detects the arrival of charged particles, to deflect later arriving charged particles away from the circuit board.